Fire Resilient Cities: The Impact of Fire Regulations, Technological and Community Resilience

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Abstract : Building resilience, sustainable buildings, urbanization, climate change, resilient cities, are just a few examples of where the focus of research has been in the last few years. It is obvious that there is a need to rethink how we are building our cities and how we are renovating our existing buildings. However, the question remaining is how can we assure that we are building sustainable yet resilient cities? There are many aspects one can touch upon when discussing resilience in cities, but after the event of Grenfell in June 2017, it has become clear that fire resilience must be a priority. We define resilience as a holistic approach including communities, society and systems, focusing not only on resisting the effects of a disaster, but also how it will cope and recover from it. Cities are an example of such a system, where components such as buildings have an important role to play. A building on fire will have an impact on the community, the economy, the environment, and so the entire system. Therefore, we believe that fire and resilience go hand in hand when we discuss building resilient cities. This article aims at discussing the current state of the concept of fire resilience and suggests actions to support the built of more fire resilient buildings. Using the case of Grenfell and the fire safety regulations in the UK, we will briefly compare the fire regulations in other European countries, more precisely France, Germany and Denmark, to underline the difference and make some suggestions to increase fire resilience via regulation. For this research, we will also include other types of resilience such as technological resilience, discussing the structure of buildings itself, as well as community resilience, considering the role of communities in building resilience. Our findings demonstrate that to increase fire resilience, amending existing regulations might be necessary, for example, how we performed reaction to fire tests and how we classify building products. However, as we are looking at national regulations, we are only able to make general suggestions for improvement. Another finding of this research is that the capacity of the community to recover and adapt after a fire is also an essential factor. Fundamentally, fire resilience, technological resilience and community resilience are closely connected. Building resilient cities is not only about sustainable buildings or energy efficiency; it is about assuring that all the aspects of resilience are included when building or renovating buildings. We must ask ourselves questions as: Who are the users of this building? Where is the building located? What are the components of the building, how was it designed and which construction products have been used? If we want to have resilient cities, we must answer these basic questions and assure that basic factors such as fire resilience are included in our assessment.

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